



United States Department of Agriculture
Forest Service

Hanging Lake Management Plan Environmental Assessment

Eagle-Holy Cross Ranger District
White River National Forest, Garfield County, Colorado
February 2018



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CHAPTER 1: INTRODUCTION

Hanging Lake (HL) is located off of Interstate 70, approximately 10 miles east of Glenwood Springs, in Garfield County, Colorado. Hanging Lake is situated between the resort communities of Vail and Glenwood Springs and is in close proximity to Aspen. Hanging Lake has become one of Colorado's high profile iconic tourism destinations and is marketed as a must-see and bucket list hike. Hanging Lake is cited as being a unique example of a lake formed by travertine deposition and supports one of the best examples of a hanging garden plant community in the in the southern Rocky Mountains. The site is also one of the larger and least altered travertine systems, where natural geologic and hydrologic processes continue to operate as they have done throughout the history of the lake. With over 150,000 visitors annually, the area is experiencing safety issues and natural resource and facility degradation – all of which are negatively impacting the visitor's experience.

This Environmental Assessment (EA) was prepared to determine whether effects of the proposed management plan and related activities may be significant enough to prepare an environmental impact statement. By preparing this EA, we are fulfilling Forest Service policy and direction to comply with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations.

This EA discloses the direct, indirect, and cumulative environmental effects that would result from the proposed action and no-action (baseline) alternatives. Additional documentation, including more detailed analyses of project area resources, may be found in the project planning record located at the Eagle-Holy Cross District Office in Minturn, Colorado or online at <https://www.fs.usda.gov/project/?project=50479>.

Background

The Hanging Lake project area consists of 128 acres that includes: the trail, the lake itself, upper Spouting Rock waterfall, Dead Horse Creek, and Colorado Department of Transportation's (CDOT) infrastructure (parking lot, I-70 on and off ramps, Colorado River recreation path, refuse containers, picnic sites, parking area restroom, and a trailhead vault toilet). The HL project area has intermixed land ownership between Xcel Energy, CDOT, and the U.S. Forest Service (USFS).

The mid-1980's brought about the reconstruction of Interstate 70 through Glenwood Canyon along the Colorado River. This construction project consolidated over thirty access sites down to four major points of access along the highway with the Hanging Lake rest area being one of them.

At that time, CDOT and the USFS designed the parking area with approximately 110 spaces based on projected use and future growth to the site (including the use of the trail). Several decades passed and use slowly grew at the Hanging Lake site. In the late 2000's, the Forest Service was successful in receiving a Colorado GOCO grant to replace Hanging Lake's aging boardwalk and railing system. The reconstruction consisted of a newly designed articulating railing system along the steepest sections of trail, a composite boardwalk at the lake with benches, interpretive signs, and a safety rockfall screen above the lake. The trail was closed for most of 2009 and key times in 2010 to complete the work. In 2011, the National Park Service designated Hanging Lake as a National Natural Landmark (NPS NNL).

In recent years, social media has further popularized the site and visitation has continued to increase. With the growth in visitation, the rest area site became congested with vehicles during peak summer weekends, and parking congestion became a reality seven days a week throughout the summers. This congestion has led to parked vehicles on the sidewalks, recreation path, and grass areas. Traffic issues arose along Interstate 70 as visitors parked vehicles along the highway and the on- and off-ramps when the parking lot was completely full.

The White River National Forest and the Eagle-Holy Cross Ranger District convened a working group of stakeholders in 2013 that included: CDOT, the City of Glenwood Springs Tourism Board, Garfield County officials, Xcel Energy, U.S. Department of Transportation, and Colorado State Patrol. The goal of this stakeholder group was to brainstorm short-, medium-, and long-term management actions for HL. The White River National Forest hired the U. S. Department of Transportation's John A. Volpe Center (Volpe) in 2013 to assist with site capacity, transportation, and operation strategies.

The group of stakeholders also funded and managed the site during the interim high-use visitation seasons from 2013 to 2017. The interim management solutions included using temporary USFS employees to manage parking onsite. In addition, CDOT re-designed a traffic turn-around, designated parking, added a temporary traffic gate, and updated interstate signage. These short-term management actions were established as an intervention while preparing a long-term management plan.

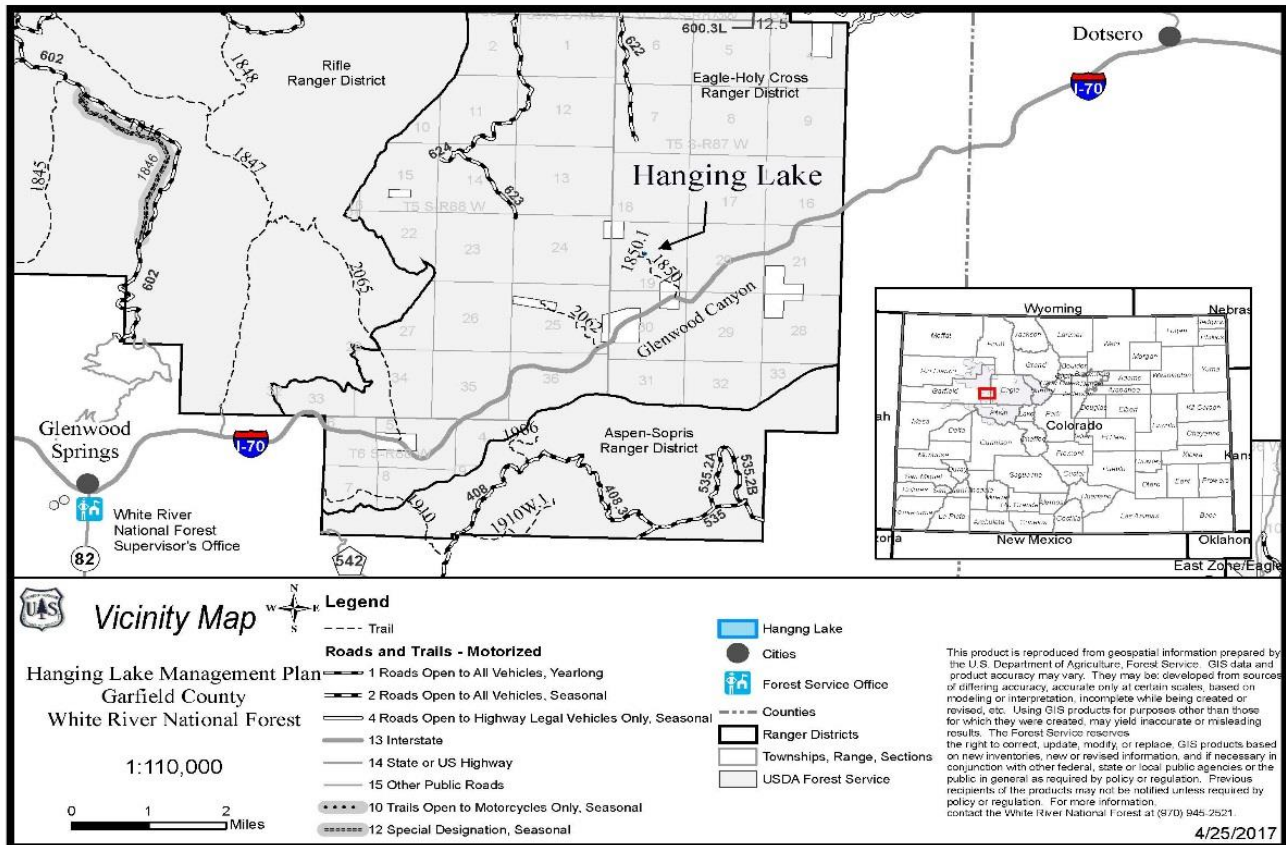


Figure 1. Hanging Lake Vicinity Map

Purpose and Need

The *purpose* of the action:

- To protect and preserve the unique and fragile natural resources at the Hanging Lake area, and sustain opportunities for high-quality recreation experiences and the related socio-economic contributions to adjacent communities.

The *need* for action is driven by:

- The growing volume of use to the Hanging Lake Area – annual visitation has grown to over 150,000 visitors with an average of 1,000 hikers per day, between May and October.
- The unmanaged visitation is causing degradation to the infrastructure (parking lot, trail tread, bridges, boardwalks and railing systems), which has resulted in safety issues.
- The unmanaged visitation has caused resource damage including compacted soils, loss of plant habitat, degradation of water quality, and impacts to historic features.
- The volume of traffic on and off Interstate 70 has resulted in safety issues.
- The visitor experience at the Hanging Lake Area has been negatively impacted as a result of the unmanaged use.

Proposed Action

The proposed action is to approve and implement the Proposed Hanging Lake Area Management Plan, which has within it several key decisions that will support feasible and long-term management actions. More specifically, the plan would (a) allocate and manage the area to a defined daily capacity of 615 visitors per day, year round; (b) manage this capacity through a fee-based reservation or permit system; (c) utilize a third party mandatory transportation provider in order to allocate and manage to the areas daily capacity during the “Peak” season (currently proposed from May 1st through October 31st); and (d) implement an adaptive management strategy to ensure that the intent of the plan continues to be realized in light of potential future changes.

The overall goal of the HL Plan is to create and implement a management system that is implementable, sustainable, and maintains the areas defined desired conditions by meeting the following objectives:

- I. Protect natural resources
- II. Manage congestion
- III. Enhance public safety
- IV. Improve visitor experience
- V. Support local tourism

While the proposed Hanging Lake Management plan will set management direction on USFS lands, working with stakeholders and partners will be integral to implementing the goals and objectives and to long-term management success.



Figure 2. Land Ownership and Project Area Map

Forest Plan Direction

This proposal would move the Hanging Lake project area toward desired conditions described in the goals and objectives outlined in the 2002 White River National Forest Land and Resource Management Plan (LRMP). This EA is tiered to the LRMP Final Environmental Impact Statement and Record of Decision. Current management direction and LRMP goals, objectives, and strategies applicable to this analysis can be found in the Proposed Hanging Lake Management Plan.

The project area is located within the Forest Plan Management Area prescription: “4.4 Recreation Rivers-Designated and Eligible”. This project is in conformance with 4.4 Management Area desired condition, goals, and objectives. For a complete description see Appendix 4.

The project will be designed to conform to the Forest LRMP and all other laws, regulations, and policies. Forest LRMP standards and guidelines will be applied as appropriate to meet Forest Plan goals and desired conditions for all resources. The 2002 White River LRMP can be found: https://www.fs.usda.gov/detail/whiteriver/landmanagement/?cid=fsbdev3_001228

Decision and Implementation

The deciding official will decide whether to: 1) Implement the Proposed Hanging Lake Management Plan, 2) Modify the Proposed Hanging Lake Management Plan, or 3) Not implement the Proposed Hanging Lake Management Plan at this time. An affirmative decision on the Proposed Hanging Lake Management Plan authorizes implementation of the management tools contained therein but does not dictate implementation methods as there is a host of implementation tools available to the USFS that would meet the specific desired conditions, indicators and thresholds described in the plan.

The deciding official will consider implementation methods based on legal authorities, feasibility, technical and operational logistics, operation and capital needs, long-term sustainability, and USFS physical and financial capabilities.

A suite of phased management actions could be implemented, including but not limited to: increased education, interpretation and outreach, signing, increased ranger presence, engineering controls (e.g. barriers, trail hardening, post, and cables, etc.), adjusting transportation times, group size limits, and change of daily capacity limits up or down.

The following is a brief description of some, but not all, of the methods, the Forest Service could utilize to implement the HL plan. These options could be phased in, used alone, or in combination:

1. Utilize Recreation.gov to issue reservations through the National Recreation Reservation Service. There is an administrative fee for this reservation system. The USFS intent is to provide fair and equal opportunity to access a permit reservation system.
2. Manage capacity through the Outfitter and Guide (O&G) via its permitting process using the O&G's reservation system.
3. Manage capacity through a third-party transportation provider's reservation system.
4. Manage capacity through a reservation system and allow for parking on site.
5. Provide enhanced management and specialized visitor services, reclamation, restoration and other on-site needs via instituting a Special Recreation Permit in accordance with the Federal Lands Recreation Enhancement Act (FLREA). A special recreation permit would generate revenue that would allow for sustainable on-site management actions. This would require following national and regional processes and would include a separate public participation process. This tool may be phased-in and integrated into the above four options.

Specific implementation details such as cost, how to obtain a permit, etc. will be determined by the option and/or service provider selected above; however, all the implementation methods above would meet the

goals, objectives, and desired condition of the plan. A variety of methods could be needed in case one approach proves to be infeasible, does not meet goals of the plan, or if conditions change over time. Numerous comments were received regarding implementation details, so the following supplemental information is provided in order to address some of those questions.

Transportation Service

The decision from this EA would issue a special use permit for a set number of service days, to provide for commercial transportation services during the peak season within the 615 capacity, as well as other associated customer service opportunities as they arise. These commercial services may occur outside the mandatory season. The decision will not address the business rule details of the transportation service, as that is outside the scope of this environmental analysis. The commercial transportation system would be the only authorized vehicle access to the Hanging Lake area for the general public during the peak season (May through October).

Reservation System

The decision from this EA would make the determination to institute a reservation system which would execute and allocate visitation to the daily capacity of 615 on the trail. Any reservation system utilized would be required to provide for equal and fair access for visitors to obtain a permit. The reservation system would also be used to stagger the timing of visitors so as to reduce crowding on the trail and enhance the visitor experience. The reservation system business rules and details will not be provided in this analysis as those details will be dependent on the service provider.

Fees

The Hanging Lake Management plan would result in a fee for a variety of identified visitor services needed to implement the plan. While there are numerous implementation tools that can be utilized to meet the plans overall goals, objectives, and desired conditions, all result in some type of fee to cover operational costs related to reservations, transportation service, enhanced visitor services, on-site maintenance, and Forest Service improvements. A reservation system is needed to allocate the daily visitor capacity year round in order to address crowding, safety, and resource damage issues, in addition to providing the customer with a single point of contact for reservations and fee collection. During the off-peak season, visitors will be able to drive to the Hanging Lake parking area, but will still be required to obtain a permit through a reservation system in order to ensure the site's daily capacity is not exceeded.

The reservation and transportation fees will not cover enhanced visitor services and restoration, maintenance, and infrastructure improvements needed on-site. It is likely that an additional fee would be pursued under the FLREA authority and phased-in over subsequent years. A fee proposal under FLREA would have its own public scoping period and require a business plan identifying specific operational and management costs needed for the Hanging Lake Area. An example of on-site needs identified in the planning process includes, but is not limited to ranger presence, interpretation, and education, as well as addressing trail improvements, deferred maintenance on infrastructure (bridge replacement/repairs, railing/boardwalk repairs, and signage), restoration and reclamation efforts, and monitoring.

Public Involvement

In 2012, The White River National Forest convened a stakeholder group to examine management planning for Hanging Lake. The goal of this stakeholder group was to develop management actions for short, medium and long-term for the Hanging Lake project area. Also in 2012, the White River National Forest hired the Department of Transportation's, John A. Volpe Center to assist with capacity, transportation and operation studies. The stakeholder group helped guide the Forest Service to fund and manage the site during the interim period from 2012 to 2017 high-use seasons.

Since the stakeholder group was first formed, monthly discussions have taken place. The Forest Service has outreached with the public in several public meetings, numerous presentations, radio shows, and newspaper articles. An initial 30-day scoping period invited the public, organizations, and agencies to comment on the Draft Hanging Lake Management Plan on August 22, 2017, and a legal notice was published in the newspaper of record, The Vail Daily, on the same day. The Forest Service received approximately 150 comments during this initial scoping period.

Issues brought forward by the public from the initial scoping period are addressed in the Hanging Lake Management Plan and/or in this EA. Some of those issues include but are not limited to: transportation service, Glenwood Canyon River and bike trail access, capacity, ease of reservation system, trail/infrastructure improvements, ranger presence, education, fees, restoration, and local user displacement. For detailed information see the Comment Analysis in Appendix 5.

CHAPTER 2: DESCRIPTION OF THE ALTERNATIVES

Proposed Action

The proposed action is to approve and implement the Proposed Hanging Lake Area Management Plan, which has within it several key decisions that will support feasible and long-term management actions. More specifically, the plan would (a) allocate and manage the area to a defined daily capacity of 615 visitors per day, year round; (b) manage this capacity through a fee-based reservation or permit system; (c) utilize a third party transportation provider in order to allocate and manage to the areas daily capacity during the “Peak” season (currently proposed from May 1st through October 31st); and (d) implement an adaptive management strategy to ensure that the intent of the plan continues to be realized in light of potential future changes.

The overall goal of the HL Plan is to create and implement a management system that is implementable, sustainable, and maintains the areas defined desired conditions by meeting the following objectives:

- I. Protect natural resources
- II. Manage congestion
- III. Enhance public safety
- IV. Improve visitor experience
- V. Support local tourism

No-Action Alternative

The no-action alternative would continue to manage the HL area under the current management scenario;

- No set daily capacity limits.
- Year-round visitation and personal vehicle access.
- Forest Service and partner organizations staff the parking lot intermittently based on available funding during the peak season (currently Friday-Monday).
- Forest Service staff would continue to focus on managing safety issues, parking congestion, stage vehicles and/or turn away all visitors when staging and parking is full.
- Forest Service presence along the trail, at the lake, and at Spouting Rock would continue based on available funding, but would likely not be at a level consistent with USFS standards.
- Infrastructure such as the water diversion features, bridges, railing system, boardwalk and other barrier devices may not see deferred maintenance needs addressed.

Issues or Alternatives Considered But Not Carried Forward

Issues considered but not carried forward at this time included additional planning for a comprehensive Glenwood Canyon management plan. The USFS, CDOT and other affected and interested parties recognize that a comprehensive plan is needed to address greater visitor displacement, access, site capacity, visitor conflict, crowding, and infrastructure needs in the canyon. However, the rapid increase in visitation and subsequent management issues at Hanging Lake precipitated the more urgent need for a dedicated Hanging Lake plan. Comprehensive planning for Glenwood Canyon will be considered to address the overall Canyon issues as a separate analysis in the future.

Another alternative or options considered but not fully analyzed was Option #4, as described in the Volpe’s “Hanging Lake Transportation and Operations Study” (See Study Appendix 1). Option #4. “REA Special Permit Fee without Shuttle” was not brought forward for full analysis as the operations study

provided enough information to conclude that it did not meet the goals, objectives and other considerations as required, and therefore was not carried forward. While Option #4 is technically feasible, manageability and operational needs would require far more physical and financial capacity from the USFS at a time when budgets and staffing are uncertain.

CHAPTER 3: ENVIRONMENTAL EFFECTS OF THE ALTERNATIVES

This section summarizes the social, physical, and biological environments of the project area and the estimated effects associated with the implementation of the Hanging Lake Management Plan (proposed action). The existing environmental condition serves as the baseline condition for each resource. The alternatives were analyzed to provide a comparison of the effects to the baseline condition.

These analyses draw on the best available science as well as guiding laws and policies (e.g., FLRMP and the Endangered Species Act). Resources not included in this EA were those resources that the proposed action does not have the potential to impact that resource.

Complete specialist reports, Biological Assessments, Biological Evaluations, and references cited have been included in the official project record.

Recreation

Affected Environment

The HL Area is iconic to Colorado and to Garfield County, where it resides. The local tourism destination communities of Glenwood Springs, Basalt, and Aspen rely on this natural feature as a tourism draw. Maintaining the socio-economic contributions generated by Hanging Lake visitors to our local communities is apparent and important management goals for the Forest.

Hiking use has grown from approximately 78,000 hikers in 2012 to approximately 150,000 hikers in 2016. This growth has resulted in resource damage on and near the trail including widening and vegetation trampling. The infrastructure of bridges, boardwalks and railing systems are failing due to the high use and continued increase in visitors. Congestion in the parking area, along the trail, at the lake and Spouting Rock creates safety issues, trail impacts, infrastructure damage, and impacts visitor's experiences.

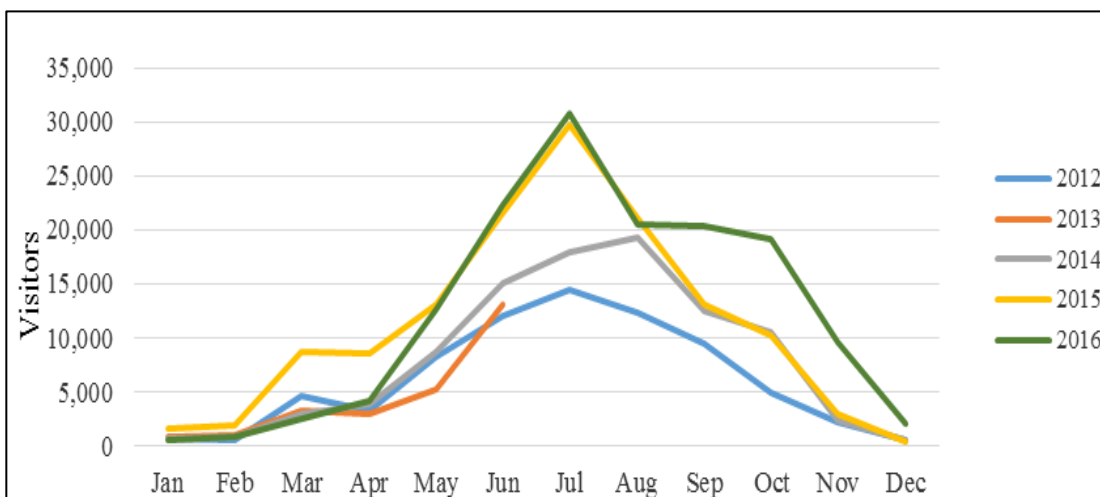


Figure 3. Hanging Lake Trailhead Monthly Traffic Averages

Since 1972, Hanging Lake Trail #1850 has been managed and maintained by the Eagle-Holy Cross Ranger District's trails program. The trail is open to hiking during both the summer and winter seasons. The Hanging Lake Trail is 1.2 miles long with .2 of the trail traveling on the CDOT paved recreation path along the Colorado River.

There are several incidental recreation activities that emanate from the HL Area and exit #125: they include access to hike or bike the recreation path; whitewater kayak staging to provide access to the rapids just below the Shoshone Dam; a take-out location for stand up paddle boards, canoes, or flat water kayaks; access to caves in the vicinity, and paragliding from the ridge above Deadhorse Creek. Off-trail access related to a couple of these activities violates the existing special order regulation that stipulates hikers are not to leave the HL Trail (#1850) tread.

Management of the HL Area has consisted of two to six USFS employees over the last five years during the peak summer months. This crew has been funded from federal appropriated sources as well as key partners, and outside grant funding. The funding levels, no matter the source, do not support the staffing required to have a USFS presence 7 days a week. The current management scenario has allowed for up to five staff to be on site four days a week with the majority of the focus being on managing the congestion in the parking area. Minimal attention has been devoted to natural resource protection, enforcement, and infrastructure maintenance or providing for basic and/or enhanced visitor services. The remaining three days of the week are unstaffed and unmanaged with the exception of CDOT crews servicing their facilities. This existing management regime affects all aspects of the HL Area including the infrastructure, natural environment, and visitor's experiences when some visitors violate posted rules and regulations. The Eagle-Holy Cross Ranger District trail crew conducts maintenance on roughly 600 miles trail. The USFS hosts several volunteer/intern work projects annually to address the heavy trail maintenance required on this highly developed trail.

The Hanging Lake trail has many constructed features which includes: a kiosk, seven bridges over Deadhorse Creek, over six hundred constructed rock steps, seven wooden resting benches, three stone resting benches, approximately 305 feet of articulating railing system, approximately 1,486 square feet of boardwalk at Hanging Lake, 447 feet of railing along the boardwalk, safety "rock slide" steel netting, signage, and approximately 333 feet of post and chain barrier throughout the trail to protect sensitive ecosystem habitats. A wooden three sided shelter constructed by the Civilian Conservation Corps is located along the trail. Current management actions include an existing Forest Supervisor Special Order (Appendix 5) for the HL Area.

The unmanaged volume of visitation in the HL Area has increased trail and other infrastructure maintenance needs. The trail is widening due to the volume of hikers stepping off to pass or just rest. The trail has grown from approximately 24 inches to over 8 feet in places. This widening creates a host of resource issues (compacted soils, loss of vegetation, erosion along the trail, and increased sedimentation into Deadhorse Creek). Bridge components are in need of replacement due to use levels. The railing system constructed in 2010 along the steep steps below the Lake was designed to last 20 years is showing deterioration and failures.

Hanging Lake's average visitor experience during the peak season is often described as congested. Upon arrival, they may wait an hour for a parking space in a staging line or be turned away after they have traveled on average three hours for this iconic hike. Visitors often are agitated due to parking and access issues. The agitated mindset has led to confrontational situations between the visitors and towards the USFS staff. Once on the trail, there are on average 300 people hiking at any one time on a normal peak season day (See Capacity Study, Appendix 3).

The Lake and Spouting Rock are the attraction points. Users congregate at these two locations to take photos and rest leading to crowding and congestion. With the increase in use, there has been an increase in vandalism and resource damage along the trail's infrastructure and natural features. Graffiti has been an issue on the historic shelter with modern day carvings and paint. With an increase in visitation, there has been an increase in visitors violating the posted regulations. On any given day, people enter the lake, walk on the log, hike off the trail, litter and bring their dogs.

The natural environment has shown degradation due to the increase in use, insufficient USFS presence and disregard for regulations. The surrounding riparian area along Deadhorse Creek has become compacted from users off the trail to let other pass or visit the creek bank. The compaction has caused the loss of vegetation in these areas which eventually causes increased erosion, loss of soil, and trail damage. Visitors frequently hike above the trail into loose rock creating an impact to delicate plant ecosystems and creating rock fall onto the trail and onto visitors. With no restroom facilities along the trail, unprepared visitors leave human waste along the trail which causes health and safety issues along the trail and Deadhorse Creek.

No-Action Alternative

Under the no-action alternative, the USFS and CDOT would continue to endeavor to manage the site under the existing condition allowing the public to drive to the site year round. Congestion and safety issues would continue in the parking area, onto I-70, and along the trail. These safety and congestion issues would continue to have both direct and indirect negative impacts to related management actions conducted by CDOT and Colorado State Patrol as well as other local agencies dealing with these issues.

Illegal parking would continue in the HL Area as well as throughout Glenwood Canyon rest areas. Assumptions are that visitation will continue to grow and visitors would continue to park in unsafe locations along on/off ramps and the shoulders of Interstate 70. This would continue to result in hazardous conditions along the I-70 as well as restricting emergency personnel and vehicles access to the area.

In the No-action alternative with no visitor capacity limitation and limited management capabilities, emergency calls to the already taxed Garfield County Search and Rescue would likely increase. Unmanaged parking would result in continued and increased negative impacts to CDOT's infrastructure such as broken irrigation lines, damaged green space, parking lot and restroom maintenance, damaged signs, and increased maintenance staff needs.

The no-action alternative with no visitor daily capacity limitation. The USFS would continue to seek and secure uncertain external funding every year for the operation of the site. Administration of the site during the summer months would continue to focus on parking management to address the congestion and safety issues related to the vehicle use rather than a presence on the trail, resource protection, enforcement, infrastructure maintenance and providing for enhanced visitor experiences.

Visitation monitoring shows increasing visitation trends that would have direct impacts on the trail infrastructure and social conditions. Alternatively, as use increases, visitors may be displaced as overcrowding, conflict, and deteriorating biophysical conditions push visitors to discover trails elsewhere.

Effects to the trail include; trail widening, erosion and trenching within the trail tread. The infrastructure of the bridges, railing systems, benches, boardwalk, and barriers would require heavier annual maintenance than normal and deferred maintenance (over 50% replacement) sooner than the planned lifespan for each feature. Degraded infrastructure is a direct tie to user safety along the trail. Safety features provide for water crossings and navigating steep hillsides. Other features provide for natural

resource protection such as drainages, boardwalks, signs, and barriers. Increased visitation will have a direct effect on these features causing their full replacement earlier than planned for.

The no-action alternative would also likely reduce or limit visitor's opportunities to obtain a high-quality recreation experience while visiting the Hanging Lake Area. With no daily limitations, visitor's experiences would likely be characterized and dominated as congested and crowded. Visitors would still be able to drive their personal vehicles to the site year-round. The congestion would continue in the HL parking area as well as the other CDOT sites (Grizzly, No Name, and Bair). Without enhanced management, illegal parking would likely continue in the lot, on/off ramps, and along Interstate 70. Illegal behavior would likely continue to expand throughout the area in respect to following basic stewardship ethics, and current rules and regulations. Without increased USFS presence along the trail and at the Lake, resource damage and negative behaviors are expected to continue.

The no-action alternative would have no effect on the incidental recreation uses such as hiking the recreation path or using the parking area as a river access location with the exception regarding the parking congestion issues detailed above. The existing regulation that visitors must remain on the Trail #1850 would remain in place. Access to other recreation experiences such as cave exploration or para-gliding would continue to be restricted from Trail #1850.

Proposed Action

Visitors to Hanging Lake would be instructed that there was a daily capacity limit, reservation system and a mandatory transportation system during the peak months. The daily capacity, transportation system, and associated reservation systems would be administered to provide for fair and equal access to obtain a permit.

Users would gain valuable information prior to their trip via the transportation provider and/or the reservation ticket system to be more prepared for the hike, weather, elevation gain, and overall expectations of this hike.

The proposed action is expected to reduce overflow parking at other Glenwood Canyon rest areas and along Interstate 70. If parking issues are alleviated, visitor experience and safety will be improved and people may experience less frustration and social unrest in the parking lot due to lack of parking. The proposed action would initiate a daily capacity limit.

Administration of the site would change the USFS management focus from the parking area to increased presence on the trail, resource protection, enforcement, infrastructure maintenance and providing visitor information and interpretation. The proposed action will provide visitors enhanced opportunities to obtain a high-quality recreation experience.

The trail and its related infrastructure would see reduced visitation year round. This reduced use would result in direct beneficial effects on the trail infrastructure of the tread condition/width, bridges, erosion control features, railing system, benches, signs, boardwalk, and barriers. The effects to the trail's infrastructure include less trail widening, less erosion and trenching within the trail tread. As a result of decreased use, the trails infrastructure; bridges, railing systems, benches, boardwalk, and barriers would need less annual maintenance. The deferred maintenance (over 50% replacement) would remain on its normal schedule for the planned lifespan for each feature.

The social effect in actively managing the HL Area would likely result in increased compliance of regulations and unwanted behaviors should be reduced since all users will have information via the permit/reservation system which will also result in a decrease in resource degradation. A short-term effect

of the proposed action could displace visitors to seek other hikes in Glenwood Canyon. This is expected to be reduced as visitors learn of alternative hikes outside the canyon, learn the reservation system, and prepare in advance.

In summary, the proposed action would result in a decrease in resource degradation to physical, social and infrastructure resources. In addition, with the proposed plans, adaptive management strategy, management actions are available to address issues in a more timely manner. The visitor's experience would be enhanced under the proposed action alternative. The USFS would be able to focus on enhancing the hiker's experience through increased interpretation, education, improved infrastructure, by having a presence on the trail, rather than managing the parking lot.

The action alternative would limit private vehicle access during the peak season of May 1st through October 31st for several incidental recreation activities that emanate from the HL Area and exit #125: they include access to hike or bike the recreation path; whitewater kayak staging to provide access to the rapids just below the Shoshone Dam; a take-out location for stand up paddle boards, canoes, or flat water kayaks; access to caves in the vicinity, and paragliding from the ridge above Deadhorse Creek. While many of the river activities are available on other parts of the river, or can still be accessed from the bike path, some visitors will be displaced. Caving and paragliding in the drainage could still occur outside of the project area but would require access from above the canyon. The access to cave and paragliding activities from within the project area would continue to violate the existing special order that requires visitors to stay on Trail #1850 and does not allow for off-trail travel. These recreation visitors may be displaced to other similar areas that offer the recreation experience they desire.

Cumulative Effects

By definition, cumulative effects are the combined incremental impacts of past, present, and reasonably foreseeable actions. Therefore, the no-action alternative would have no cumulative effect as it is not an action. However, under the no-action alternative social, physical and environmental degradation trends would continue.

Under the proposed action, there may be an impact to recreation patterns and use in the analysis area as instituting a permit system may affect the spontaneity and freedom associated with no capacity limits. It is reasonable to assume that a Glenwood Canyon comprehensive management plan will be analyzed in the future; however, due to the limited number of past, present, and reasonably foreseeable actions implementing a management plan would not significantly affect the analysis area.

Socio-Economic

While the project area is located within Garfield County, a two-county study area is used in the socioeconomic analysis (Garfield and Eagle). As part of the U.S. DOT Volpe Center's visitor survey (see Appendix 2), respondents were asked to estimate their trip expenditures within 50 miles of Hanging Lake – which includes Eagle County and Garfield County. This analysis utilizes the same two-county study area in the Affected Environment section in order to describe the existing socioeconomic conditions of the analysis area.

Affected Environment

The existing economic and social conditions of the study area are necessary to set the context for comparison of alternatives and consideration of the decision described in this section. Summaries of existing demographic, social and economic conditions are examined for counties within the project area (Eagle County and Garfield County in CO). Unless otherwise noted, sources consist of 2016 data from the U.S. Department of Commerce, Census Bureau, American Community Survey, Department of Labor and other official sources retrieved using the EPS-HDT (2016) software system maintained by Headwater Economics®. Major trends and benchmark comparisons (State of Colorado) and detail data with complete, county-by-county statistics are found in the project record.

No-Action Alternative

The no-action alternative would continue to manage the HL area under the current management system, without a daily capacity limit. Due to parking issues, people who cannot find a parking spot will continue to leave agitated and frustrated or create social unrest in the lot, confront other visitors and/or staffs, compromising the safety of other visitors and employees. On top of parking issues, crowding and congestion on the trail will continue to create rushed, stressed, and frustrated visitor experiences.

If unmanaged use along the trail, at the lake, and at Spouting Rock continue to intensify resource degradations, to the point where it becomes necessary to implement future restrictions – either seasonal or extended – then the public will not have the full opportunity to experience this National Natural Landmark. Economic contributions from visitor spending may be affected. If the site is left unmanaged or additional restrictions are implemented visitors (first time as well as returning) may choose not to make a trip out to Garfield or Eagle County for other activities, then potential expenditures are lost in the local economy. On the other hand, if the site is further restricted by special orders and potential visitors still choose to make a trip out to Garfield or Eagle County for other recreation activities, then visitor expenditures are retained in the area.

Proposed Action

The Proposed Action of allocating and managing the area to a defined daily capacity of 615 users per day year round is aimed to protect resources, manage congestion, improve safety and visitor experience and thereby continue to support local tourism.

Quality of visitor experience aside, economic contributions from recreation spending may be affected by the daily capacity limit. Since visitation during the summer months currently averages from 714 to 1,013 hikers per day, the proposed daily limit of 615 users per day (year-round). This reduction may translate to a decline in recreation spending in the local area. Potentially, some hopeful visitors may not be able/willing, to secure a permit or utilize the transportation system at a day and time of their choosing (from a variety of reasons such as work, school, and other time conflicts). When that occurs, if those displaced HL visitors choose not to make a trip out to Garfield or Eagle County for other activities, then potential recreation expenditures are lost. On the other hand, if those displaced HL visitors still decide to make a trip out to Garfield or Eagle County for other recreation activities at a different day and time, then tourism expenditures may be retained in the area. While both scenarios are plausible, survey results (Volpe Center) showed that more than 65% of all visitors traveled over three hours from the Front Range and the hike was the focus of the day's activity; moreover, 70% of visitors were there for the first time and have no other activities planned.

Scoping comments raised concern regarding potential fees associated with a mandatory transportation system. Specifically, comments were whether the cost of riding the transportation system would preclude

some members of the public from enjoying this recreation area. While the establishment of transportation fee rates will be determined in subsequent efforts and not part of this decision, the Volpe Center visitor survey (Appendix 2) had gathered visitor opinions on this topic. A majority of survey respondents indicated that a willingness to pay \$5 to \$10 per person for transportation. This represents a minor portion of the total cost which existing visitors incur during a trip out to the HL recreation area (see ‘average hiker expenditures by spending category’, Appendix 2).

Wild and Scenic Rivers

Affected Environment

The Hanging Lake Area is within the Colorado River corridor within Glenwood Canyon where two segments of the river were found to be eligible under 5(d) (1) study criteria in the Wild and Scenic Rivers Act (WSR) as part of the 2002 FLRMP planning process.

The FLRMP prescribed Management Area “4.4 Recreation Rivers- Designated and Eligible” (See Appendix 4) to the Hanging Lake area. In 2015, an interagency (BLM, USFS) WSR Suitability Study was completed and the Forest’s two segments on the Colorado River corridor maintained its “eligibility” and the forest plan management prescriptions remained. Both the BLM and USFS made decisions as documented in each agencies Record of Decision as part of the BLM’s, Colorado River Valley Field Office, Resource Management Plan, Revision, 2015, EIS to adopt the “Stakeholder Plan”. The Stakeholder Plan is related to the management of water delivery and water-related values within in the Colorado River corridor that included USFS segments 1 and 2 (Glenwood Canyon). For more information on the WSR Suitability Study go to <https://www.fs.usda.gov/project/?project=43846> . This collaborative partnership is in conformance with and compliments Forest Plan direction for management activities in Glenwood Canyon and on upstream segments on the Colorado River.

The goal of the FLRMP’s management area prescriptions for WSR’s is to administratively preserve the corridors identified Outstandingly Remarkable Values (ORV’s) and to maintain the corridors eligibility or suitability. The ORV’s identified in this segment were recreational, scenic, and geologic values. The Hanging Lake area contains all the identified ORV’s and is within Colorado River Segment 1. Forest Plan direction for “Recreation Rivers” states that “These areas are managed to protect and perpetuate eligible river segments in their current conditions so that their recreation river qualities are not diminished...” (See Appendix 4. for complete description).

No-Action Alternative

The no-action alternative will have no direct effect on the Colorado Rivers WSR ORV’s values identified in Glenwood Canyon (Segment 1), nor will it affect the overall corridors “eligibility” status. However, indirect and potential cumulative effects are reasonably feasible and could be realized under the No Action Alternative as physical, social and administrative resource degradation will likely continue to occur due to unlimited and increasing amounts of visitors within the Hanging Lake project area.

Hanging Lakes geologic ORV, consisting of its relatively undisturbed travertine formation, is likely to experience considerable or irreplaceable effects if the current number of visitors continues without enhanced management actions. Effects could also be realized to the areas scenic values that are tied to Hanging Lake’s unique geologic display. Hanging Lakes’ popularity is largely driven by the area’s highly publicized scenic values.

In addition, ongoing management issues and concerns related to graffiti, trash, and facility degradation are likely to escalate if current management issues are not addressed. Without enhanced on-site management actions such as cables, barriers, interpretation signing, ranger presence, etc., damage to the areas sensitive and vulnerable geologic features at the Lake and Spouting Rock could result in cumulative and irreversible impacts to this part of the WSR corridor. Assumptions can be made that under the no action alternative visitor's recreational experience and values will continue to degrade as crowding, congestion, and resource degradation continues.

In summary, while these direct and indirect effects may be realized on 128 acres within the Hanging Lake project area, the overall determination of "Eligibility" would remain for the USFS segments 1 and 2 on the Colorado River until future WSR studies either confirm its "Eligibility" status and boundaries, find it "Suitable", or release it from further study.

Proposed Action

The proposed action would result in both short and long-term direct and indirect effects to the WSR ORV's within segment 1 on the Colorado River and within the Hanging Lake project area which would maintain and potentially enhance the ORVs. Implementation of the proposed action would result in direct effects as a result of the area being managed to a daily capacity year round. Managing to a daily capacity would result in decreased resource degradation to physical, social and administrative resources. In addition, with the proposed adaptive management strategy, reaction to future resource damage will be more responsive. With a decrease in the sheer volume of visitation, WSR ORV's within the project area would be protected and potentially improved over the long term, thereby preserving and perpetuating the segments WSR eligibility and potential future designation as stated in the 2002 FLRMP.

It can be assumed that cumulative effects will be realized within the Hanging Lake project area with the combined results of past efforts; National Park Service National Natural Landscape designation, Colorado Natural Heritage Program (CNHP) Conservation Area identification/recommendations, and current planning efforts found in: the WRNF Forest Plan, Upper Colorado WSR Stakeholder Group Plan, and with future management direction in the Hanging Lake Management Plan. Beneficial effects are expected through the above suite of administrative management direction to the areas identified scenic, geologic, and recreational ORVs.

In summary, the proposed action will meet the intent of the WSR Act in that the corridors identified ORV's will be administratively protected and thereby preserved. The proposed action is in conformance with the Forests LRMP. Specifically, the proposed action will maintain the corridors WSR eligibility or suitability, and preserve the areas identified Outstanding Remarkable Values. Since there are no significant negative direct or indirect effects expected to WSR resources as a result of the proposed action, there are no expected cumulative effects, above the baseline condition, associated with the proposed action.

Heritage

Affected Environment

The cultural resources within the Hanging Lake Management Plan project area consist of the Hanging Lake trail shelter and portions of the Hanging Lake trail (steps, railings) that were constructed by the Civilian Conservation Corp in the 1930s. Hanging Lake is a "special place" which as a natural resource has a cultural/spiritual value for many people.

Under Section 106 of the National Historic Preservation Act of 1966 (NHPA), Federal agencies are required to take into account the effects of a Federal undertaking that is eligible to or listed in the National Register of Historic Places (NRHP). “36 CFR §800.3 Initiation of the Section 106 process”, states:

(a)(1) *No potential to cause effects.* If the undertaking is a type of activity that does not have the potential to cause effects on historic properties, assuming such historic properties were present, the agency official has no further obligations under section 106 or this part.

No Action Alternative

A No-Action Alternative would not implement the HL plan. This alternative would continue current conditions that further threaten the cultural resources within the area. Without a reduction of overcrowding, the historic features along the Hanging Lake Trail will continue to be threatened by graffiti and other vandalism. The “special place” aspect of Hanging Lake as a cultural resource will continue to be impacted by current and future overcrowding unless a new management plan or additional regulation/restriction is executed.

Proposed Action

Under the HL plan as proposed, USFS staff will be able to be coordinate with USFS heritage staff to develop an awareness through interpretation and education regarding the cultural sites within the HL area, help monitor those sites and develop management actions if a site is damaged or threatened by use levels.

The HL plan will reduce impacts to the cultural resources in the project area by limiting daily visits to Hanging Lake year-round by using a permitting system, therefore decreasing potential high use impacts to historic features. Fewer people equates to fewer impacts to historic features. There is no proposed ground disturbance, no modification or removal of historic features.

In summary, the HL plan is not an undertaking that will cause effects on historic properties. It is a reduced use permitting action that will provide less impact to historic features, therefore the WRNF is in compliance with Section 106 of the National Historic Preservation Act. This aligns with Forest Service and federal policies and laws that protect cultural resources. The permitting process and adaptive management strategy would incorporate visitor education, and cultural resource protection this would result in beneficial effects to cultural resources. Since there are no significant negative direct or indirect effects expected to heritage resources as a result of the proposed action, there are no expected cumulative effects, above the baseline condition, associated with the proposed action.

Lands and Realty

Affected Environment

In addition to the Federally-owned land upon which Hanging Lake and the Hanging Lake Trail (#1850) are located, there are two parcels of non-Federal property which have a direct impact upon the Forest Service’s management of recreational use. One parcel is titled to Public Service Company of Colorado (PSCo - a utility subsidiary of Xcel Energy Inc.), and the other parcel is titled to the Colorado Department of Transportation (CDOT). Both parcels are located in the bottom of Glenwood Canyon and include segments of the Colorado River and Interstate 70. The PSCo parcel also includes a portion of the Hanging

Lake rest area/parking lot, while the CDOT parcel includes the lowest elevation portion of the Hanging Lake Trail.

The Forest Service holds a trail right-of-way easement across the CDOT parcel for the lowest segments of the Hanging Lake Trail. Existing USFS Special Use Authorizations (SUP) in the immediate area include a permit to PSCo for overhead electric utility lines, a lease for a cellular communications site, and a series of highway easement deed to CDOT for Interstate 70.

No-Action Alternative

If the Proposed Action is not implemented, and current conditions remain in effect into the future, the Lands-Realty program should ensure that agency actions in the Hanging Lake area continue to comply with the terms of the 1985 trail easement from CDOT, and do not interfere with the operation of the various existing special use authorizations listed above.

Proposed Action

As discussed in the proposed HL plan, numerous actions will need to take place with other partners that have management responsibilities at Hanging Lake in order to implement all elements of the plan. An initial five-year lease from CDOT to USFS will be done which will require processing by the WRNF and Region 2 Lands-Realty program, in order to ensure compliance with laws, regulations, and agency policies. Similar processing by the Lands-Realty program would also be required for the planned future land exchange of full fee title.

Additional lands and realty actions taking place outside the USFS will also include CDOT and Federal Highway Administration (FHWA) actions, who will prepare documentation justifying the abandonment of the Hanging Lakes “Safety Rest Area” designation. This documentation would need to be submitted to FHWA but would not require an official approval action by FHWA. Per 23 CFR 710, if there are any disposals of interstate ROW, changes to interstate access lines, or if the interstate ROW was disposed of at less than fair market value, FHWA would have to approve these requests. If any of these actions are necessary, FHWA would need to review/approve a Categorical Exclusion.

Wildlife

Affected Environment

The analysis area has an elevation range from 6,086 to 7,156 feet. The vegetation adjacent to the Hanging Lake and Spouting Rock trails is composed primarily of Douglas fir (*Pseudotsuga menziesii*), Engelmann spruce (*Picea engelmannii*), and narrowleaf cottonwood (*Populus angustifolia*) with a shrub component (including red-osier dogwood (*Cornus sericea*) and Rocky Mountain maple (*Acer glabrum*)).

No-Action and Proposed Action Alternatives

The black swift, *Cypseloides niger*, is the only threatened, endangered or proposed species, and USFS Region 2 sensitive species that may be influenced by proposed management actions in the Hanging Lake area, and was the only species further analyzed for this project. All other species identified in the BA/BE (found in the project record) were not further analyzed as project activities would not affect the species as there are no vegetation management activities associated with this project. No further analysis is needed for species that are not known or suspected to occur in the project area, and for which no suitable habitat is present.

Black Swift

Black swifts are neotropical migrants that winter in Central and South America and breed in North America. They nest in sheltered crevices or ledges on cliff faces, caves, or, uniquely, behind waterfalls. For the latter, they make their cup-like nests using moss materials found around waterfalls, and in Colorado, the nests are on average 8-10 feet high, but up to 100', to avoid predation (Wiggins, 2004). Black swifts arrive in Colorado later than other migrants, typically in June and begin incubating eggs (they lay a single egg) in early July. Black swifts return to the same nesting sites each year (Wiggins, 2004).

Prior year surveys have found black swifts nesting behind Spouting Rock Falls and Bridal Veil falls, most recently in 2005. In 2017, surveyors did not find any sign that black swifts were nesting at Bridal Veil Falls or behind Spouting Rock.

In summary, there would be no impact to the black swift as a result of either the no action or the proposed action alternatives. This is because there are no proposed vegetation management activities that would affect water levels or prey availability, visitation levels would remain high at 615 visitors per day (though lower than current estimates), and a no-disturbance buffer has not been implemented around Spouting Rock Falls.

There are no negative effects expected as a result of the proposed action and wildlife habit health, both physical and biological, is expected to be maintained or improved. Since there are no significant negative direct or indirect effects expected to wildlife resources as a result of the proposed action, there are no expected cumulative effects, above the baseline condition, associated with the proposed action.

Aquatics

Affected Environment

The analysis area includes the Dead Horse Creek watershed and a small downstream section of the Colorado River on USFS lands on the on the Eagle-Holy Cross Ranger District, Garfield County, Colorado.

No-Action and Proposed Action Alternatives

The greenback cutthroat trout, *Oncorhynchus clarkii stomias*, is the only federally threatened, endangered, or proposed aquatic species found on the White River National Forest. The habitat in Dead Horse Creek is characterized by steep gradient channel types with low-quality fish habitat, and Hanging Lake is considered to be naturally fishless. However, the lake has been stocked with non-native brook trout. The Colorado River provides better quality habitat but is also dominated by non-native fish species. Greenback/green lineage cutthroat trout are not located in or expected to occur within the project area and as a result, there would be no effects to the greenback cutthroat trout (*Oncorhynchus clarkii stomias*) as a result of the proposed management plan or a no-action alternative.

Water diversion projects may affect habitat for ESA-listed fish species found in the Colorado River downstream of the White River National Forest boundary. Since no water depletions are associated with the proposed management plan or the no-action alternative, "no effects" are expected to bonytail (*Gila*

elegans), Colorado pike minnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and razorback sucker (*Xyrauchen texanus*).

A review was conducted of available information to assemble occurrence records, describe habitat needs and ecological requirements, and determine whether field reconnaissance is needed to complete the analysis. Sources of information may include Forest Service records and files, the State Natural Heritage Program database, state wildlife agency information, and published research.

No further analysis is needed for species that are not known or suspected to occur in the project area, and for which no suitable habitat is present. No suitable habitat is found within the project area for the boreal toad. If suitable but unoccupied habitat is present, the potential effects on habitat were evaluated.

Leopard Frogs

Lake/wetland habitat is present at Hanging Lake that could be occupied by northern leopard frogs. Over the last eleven years, surveys conducted by USFS, Colorado Parks and Wildlife, and Colorado Natural Heritage Program biologists have failed to detect northern leopard frogs on the Eagle-Holy Cross Ranger District. In addition, there have been no reported sightings of northern leopard frogs at Hanging Lake. If they ever occurred there, the stocking of non-native brook trout would have extirpated the population.

Fish species

Suitable habitat exists for bluehead sucker, flannelmouth sucker, mountain sucker, roundtail chub, and Colorado River cutthroat trout throughout the project area and in downstream receiving streams. Flannel mouth suckers, bluehead suckers, and roundtail chub are found in the Colorado River downstream of the project area. However, the establishment of non-native fish that compete with these species contributes to less than ideal conditions. The Shoshone dam also contributes to altered habitat structure by altering hydrological tables and temperature. Mountain suckers have not been documented on the Eagle-Holy Cross Ranger District. There are 13 known populations of Colorado River/blue lineage cutthroat trout found on the Eagle-Holy Cross Ranger District, however, none are located near the project area. The intent of the management plan is to limit the daily visitation use of the Hanging Lake area. There are no significant changes to stream habitat either positive or negative associated with this proposal or the no-action alternative. Stream habitat would be maintained by the implementation of either the proposed action or no-action alternatives.

Based on the discussion above, there would be no impact to bluehead sucker (*Catostomus discobolus*), flannelmouth sucker (*Catostomus latipinnis*), mountain sucker (*Catostomus platyrhynchus*), roundtail chub (*Gila robusta*), Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*), northern leopard frog (*Lithobates pipiens*), or boreal toad (*Anaxyrus boreas boreas*) or their habitats as a result of either the proposed action or no-action alternatives.

There are no negative effects expected as a result of the proposed action and stream health both physical and biological is expected to be maintained. Since there are no significant negative direct or indirect effects expected to aquatic resources as a result of the proposed action, there are no expected cumulative effects, above the baseline condition, associated with the proposed action.

Soils and Geology

Affected Environment

The Hanging Lake project area comprises an area of 128 acres within the White River National Forest (WRNF). Rock outcrop with small areas of Cryorthents, Torriorthents and shallow to moderately deep Cryoborolls soils make up the substrate of the Hanging lake area. The Cryorthents and Torriorthents soils are within the Entisols soil order which means they are weakly developed soils from sedimentary rock (USDA Forest Service, unpublished data). In small pockets, the Cryoborolls soil is present – it is a Mollisol soil due to the addition of organic materials from plants incorporated into the soil. In the majority of the Hanging lake area, rock outcrop from Leadville limestone and granite create the canyons, cliffs, and ridges. The lake itself is composed of travertine, created when the Leadville limestone was dissolved. The textures of the soils in the area, in general, are medium to coarse textured (silt loam to sandy loam) and have a high content of coarse rock fragments. Drainage class ratings for the soils are typically well drained. The erodibility of the soil surface layers are below the “erodibility” threshold, however, removal of organic-rich surface horizons often exposes much more erodible, clayey subsoils. Maintenance of soil organic matter and surface O and A-horizon integrity is paramount in avoiding erosion, compaction, and hydrology problems potentially associated with biomass removal from recreation.

No Action-Alternative

The no-action alternative would allow for current and increased visitor use to continue to adversely impact the soil resource on the trail, around Hanging Lake and Spouting Rock. The bare ground already exposed from the widening of the trail and off-trail travel will erode and displace due to no topsoil and vegetation cover present for protection. The soil is a very slow renewable resource as estimates for rates of soil formation range from .0056 cm to .00078 cm a year (Alexander, 1998). Erosion caused by recreation overuse is an irreversible and irretrievable commitment of resources. The loss of soil organic and mineral matter and earth materials may potentially be offset by soil organic matter accumulation that accompanies the regenerative growth of the trees, shrubs, grasses, and forbs on forest land.

Proposed Action

The proposed action will generally reverse the current adverse environmental impacts that day-use recreation has on soil resources in the Hanging Lake area. By limiting the number of visitors along the trail, there will be less trail widening, compaction from foot traffic, and off-trail travel. Studies done by the Volpe center has informed the Forest Service that with the increasing amount of visitors on the Hanging Lake trail there is more removal of ground vegetation cover, litter, and topsoil lost which exposes bare ground. Exposed bare ground causes high susceptibility to erosion and slope instability. The proposed action will serve as a positive effect that will address soil and other biophysical impacts from high visitation.

Botany

Affected Environment

Hanging Lake is composed of travertine, created when dissolved limestone from the Mississippian Period Leadville Formation (through which Dead Horse Creek flows) is deposited on rocks and logs, creating travertine layers. According to CNHP (2003), the site supports an excellent occurrence of a globally imperiled hanging garden plant community (Sullivantia hapemanii- (Aquilegia barnebyi)). The site also contains a good occurrence of globally vulnerable (G3/S2) montane Box elder/ red osier dogwood riparian forest (Acer negundo/ Cornus sericea). This is a unique and rare riparian plant community (< 10 occurrences in the state of Colorado). This site also contains historical occurrences of globally vulnerable

plant subspecies, the hanging garden sullivantia (*Sullivantia hapemanii* var. *purpusii*), which is endemic to western Colorado.

No Action Alternative

The no-action alternative would persist current soil degraded conditions and increase the potential for invasive species to persist. If there continues to be an increase in invasive species and degraded soil health there could be a negative impact on historical occurrences of globally vulnerable plant subspecies, the hanging garden sullivantia (*Sullivantia hapemanii* var. *purpusii*). For the WRNF sensitive species, an increase in invasive species could outcompete native vegetation in the area and therefore may have a negative impact on these species. Future native plant monitoring would identify WRNF sensitive species. At this time there are no known individuals or populations of the 2 species that have potential habitat, lesser panicled sedge, and dwarf raspberry.

Proposed Action

The proposed action would limit soil compaction and improve soil health. Native plant viability and distribution would improve with healthier soils. For the WRNF sensitive species, the action area contains lake/wetland habitat that could be occupied by various sedges including lesser panicled sedge (*Carex diandra*). The proposed action would limit the compaction near and surrounding the wetlands, therefore improving soil health and habitat conditions for sedges. Suitable habitat potentially exists for dwarf raspberry (*Rubus arcticus* subsp. *Acaulis*). Hanging Lake area would be at the lower elevation range for this species. If individuals were found, improved soil and vegetation conditions would allow individuals to persist.

Based on the discussion above and no known documented occurrences, indirect, direct impacts or cumulative impacts, there would be no impact to dwarf raspberry or lesser panicled sedge.

CHAPTER 4: AGENCIES AND PERSONS CONSULTED

The Forest Service consulted the following individuals, Federal, State, Tribal, and local agencies during the development of this environmental assessment.

- Garfield and Eagle Counties
- Colorado Parks and Wildlife, Trails Program
- Colorado Department of Transportation
- Federal Highways
- Colorado State Patrol
- U.S. Department of Transportation, John A. Volpe Center Volpe Center
- Roaring Fork Transportation Authority
- Glenwood Springs Fire Department
- Garfield County Search and Rescue
- Glenwood Springs City Council
- Glenwood Springs Tourism Promotion Board
- National Park Service
- White Mountain National Forest
- Zion National Park
- Roaring Fork Volunteers
- Volunteers for Outdoor Colorado
- Forest Conservancy
- Rocky Mountain Youth Corps